

Space News **ROUNDUP!**

VOL. 4, NO. 25

MANNED SPACECRAFT CENTER, HOUSTON, TEXAS

OCTOBER 1, 1965

No Earlier Than October 25

Gemini VI Rendezvous And Docking Mission Set

The two-day mission of Gemini VI, which will include man's first attempt to rendezvous and dock with an orbiting vehicle in space, is scheduled to be launched from Cape Kennedy, Fla., no earlier than October 25.

Pilots for Gemini VI are astronauts Walter M. Schirra Jr. and Thomas P. Stafford. Backup pilots are Virgil I. Grissom and John W. Young. This will be Schirra's second space flight. His first was Oct. 3, 1962 aboard Mercury spacecraft Sigma 7.

Prime objective of Gemini VI is to prove out the ability of Gemini to rendezvous and dock with an orbiting Agena vehicle. Secondary objectives of the flight include evaluating maneuverability of the two undocked vehicles.

Two launches are required for the mission. The Gemini-Titan and the Atlas-Agena. Both launch vehicles will be counted down simultaneously to about T-101 minutes for Gemini. At this time the Atlas will be launched to place the Agena into

circular orbit of about 185 miles.

Following successful launches of both vehicles the first opportunity for the Gemini launch will be one revolution or approximately 101 minutes after the Atlas Agena launch.

When the Agena has obtained proper orbit, Gemini VI will be launched into an orbit of about 100 miles perigee and 168 miles apogee. During the first three revolutions of Gemini VI the astronauts will maneuver their spacecraft into a circular orbit of about 168 miles, approximately 17 miles below the Agena.

On the fourth revolution, as the Gemini spacecraft passes over the Atlantic Ocean, the astronauts will begin terminal rendezvous maneuvers for a planned docking with the Agena between Australia and Hawaii.

Only attitude maneuvers and translations maneuvers using Gemini Orbital Attitude And Maneuvering System (OAMS) will be attempted while the two spacecraft are docked.

It is planned to dock and

separate spacecraft several times to provide experience with docking procedures. Each astronaut will practice docking under day and night lighting conditions. Following final separation the astronauts will use the spacecraft radar to transmit commands to the Agena to gather additional data on Agena visibility at different altitudes and distances.

About 10 hours of flight time have been planned for rendez-

vous and docking activities. However, based on experience in previous flights, the Gemini VI flight plan will be flexible to provide whatever time is needed to accomplish these activities.

Scientific and medical experiments for Gemini VI are presently under consideration.

Total flight time for Gemini VI will be about 46 hours and 47 minutes from liftoff to landing. Landing is planned in the Atlantic Ocean about 330 miles

south of Bermuda.

Following recovery of the astronauts, ground command will be used to perform various Agena exercises. These are to test Agena command and control, useful lifetime and maneuver capabilities.

Gemini VI marks the halfway point of Project Gemini. Of the remaining six flights, five will be rendezvous missions and one, Gemini VII, will be a long duration flight lasting up to 14 days.

Gemini VIII Flight Crew Named; Mission Includes Rendezvous, EVA

The crews for the eighth Gemini mission scheduled for the second quarter of next year, were named September 20, with the prime crew to be Neil A. Armstrong, command pilot and David R. Scott, pilot, and Charles Conrad Jr. and Richard F. Gordon Jr. as their backups.

Scheduled for at least two days, the mission will include a fairly heavy experiment schedule in addition to performing several rendezvous. The mission will also include a long duration extra-vehicular activity (EVA) in which Scott will remain outside the spacecraft for probably more than one orbit, through at least a whole day and night cycle.

In the rendezvous exercises, the first one will be similar to the GTA VI planned rendezvous, and then the spacecraft and Agena will be separated, possibly by commanding the Agena from the ground, into other parts of space, unknown to the crew. In the second rendezvous, the spacecraft crew would approach from above the Agena, using an



NEIL ARMSTRONG
Gemini VIII command pilot



DAVID R. SCOTT
Gemini VIII pilot

earth-type background, which is considered more difficult than an approach from below using a stellar background.

The EVA exercise will be performed using both a short 25-foot type umbilical similar to the one used by Ed White on Gemini IV, and a 75-foot tether and a support package containing an oxygen supply.

Scott will use the shorter um-

(Continued on Page 2)

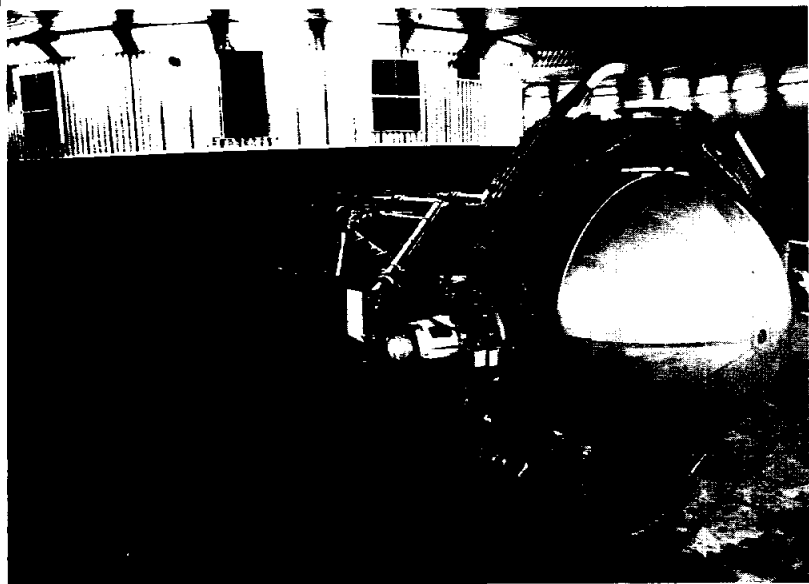


CHARLES CONRAD JR.
Gemini VIII backup crew



RICHARD F. GORDON JR.
Gemini VIII backup crew

MSC's Centrifuge Nearing Completion



CENTRIFUGE RUN—The 50-foot arm of the Manned Spacecraft Center's centrifuge with the gondola is shown (top photo) just before making a run. The centrifuge arm is being spun (lower photo) at 14 revolutions per minute by the 6,700 horsepower direct current motor. Acceptance tests to check safety features of the centrifuge facility are scheduled to be conducted this month.

Gemini VII Spacecraft Completes Altitude Chamber Acceptance Tests

The Gemini VII spacecraft has successfully completed altitude chamber tests, with the prime and backup flight crews having spent about four hours each in the spacecraft in an environment equivalent to 150,000 feet altitude.

Completed September 20 at the McDonnell Aircraft Corp., St. Louis, prime contractor for the Gemini spacecraft, the tests constituted the final acceptance check of the environmental control system. In addition, all crew equipment was checked out at altitude.

The prime crew, Astronauts Frank Borman and James Lovell, wore the lightweight suit which is under consideration for the mission. The backup crew, Edward H. White II and Michael Collins, wore regular Gemini space suits.

Spacecraft cabin pressure was maintained at five psi throughout the tests except for a 45-minute period when the spacecraft was depressurized and the hatch opened by the backup crew to check the reaction of various items in the cabin in a near vacuum.

NASA To Sponsor National Conference On Spacecraft Sterilization Technology

The First Annual National Conference on Spacecraft Sterilization Technology will be sponsored in November by the National Aeronautics and Space Administration.

The meeting will be held November 16-18 at the California Institute of Technology, Pasadena, Calif. CIT and NASA's Jet Propulsion Laboratory will host the conference.

With planning well along on a Voyager series of planetary exploration spacecraft, sterilization of planetary landing capsules has become of prime importance to NASA. An unsterilized capsule landing on a planet would infect it with earthly bacteria and ruin any effort to study what life might have originally existed on the planet.

The Space Science Board of the National Academy of Sciences has urged that "the highest priority" be given to preventing premature biological contamination of Mars which "could destroy an opportunity

to carry out a meaningful search for life forms on Mars with remote detectors."

The Spacecraft Sterilization Technology Conference will brief the space industry and the academic world on NASA's needs for spacecraft sterilization.

NASA speakers will include Homer E. Newell, associate administrator for Space Science and Applications; William H. Pickering, director of JPL; Orr E. Reynolds, director of OSSA's Bioscience Programs; and Oran W. Nicks, director of OSSA's Lunar and Planetary Programs.

Five sessions are planned with the following subjects: sterilization requirements; control of microbiological contamination; microbiological decontamination and sterilization; sterilizable capsule components and subsystems; and capsule structures and payloads, procedures, and facilities.

Inquiries concerning attendance at the Conference should be addressed to NASA's Special Assistant for Planetary Quarantine, Lawrence B. Hall, Code SB, National Aeronautics and Space Administration, Washington, D.C. 20546.

Director Of NASA's Ames Center To Retire After 45-Years Service

Dr. Smith J. DeFrance, director of NASA's Ames Research Center, Moffett Field, Calif., will retire Oct. 15, after 45 years of service it was announced recently by James E. Webb, Administrator.

He will be succeeded by H.

Julian Allen, now assistant director of Ames.

"Dr. DeFrance's leadership at Ames has brought about many engineering and scientific achievements in our country's aviation and space programs," Webb said, "and we all owe him a great debt of gratitude."

Following distinguished service as a combat pilot in France in World War I, DeFrance served for 18 years at the Langley Research Center in Virginia. He became director of the Ames Research Center when it was created in 1940. In 1947 he received the Presidential Medal of Merit for designing and building the Center.

DeFrance received the 1964 Career Service Award of the National Civil Service League, an award to the top 10 civil service employees in the Government.

He received his B.S. Degree in Aeronautical Engineering from the University of Michigan in 1922. In 1953, the University awarded him the honorary degree of doctor of engineering. The University of California awarded him the honorary degree of doctor of laws in 1952.

DeFrance and his wife, Ruth, live in Los Altos, Calif.

Radiation Control Contract Awarded For Spacecraft In Space, On Ground

A support contract for control of radiation sources, in space and on the ground, for manned spacecraft has been signed with Tracerlab, a Division of the Laboratory for Electronics.

The \$132,000 contract provides for health physics and radiation protection services. Health physics covers the hazard analyses, monitoring, waste disposal, and decontamination of radiation sources used at the Manned Spacecraft Cen-

ter in experimental work, check-out, and testing.

Radiation protection services include studies performed on spacecraft hardware and experiments which use radiation sources. Safety standards and environmental tests will be determined and must be met by each item before it can be flown.

The handling and use of radioactive materials at MSC is coordinated by the Radiological Control Committee, chaired by the MSC Radiation Control Officer. Safety standards and procedures for all radiation sources in use on site or in space are set up by this committee.

Tracerlab will also assist in determining whether there would be any interaction between radiation sources on-board a spacecraft.

Gemini VIII

(Continued from Page 1)

bilical to retrieve the support package from the adapter section and will also have use of a maneuvering unit similar to the one used by White on Gemini IV. The maneuvering unit for Scott will have more fuel and the impulse will be higher, nearer 50 feet per second instead of six fps.

The suit to be worn by Scott will be quite similar to White's, having one layer of felt less, making the outer garment lighter. An RF (radio) link instead of a hardline communication will be used while Scott is on the long tether. This will be a test of the radio link for the Manned Maneuvering Unit (MMU) scheduled for use on the Gemini IX mission.

Scott will perform a series of exercises with tools, using both torque-type standard tools, and anti-torque tools. He will unbolt and bolt various latches on a pallet in the adapter section. He will also retrieve a nuclear emulsion package from the adapter section of the spacecraft and a micrometeoroid package from the Agena.

Apollo Solar Telescope Mount Engineering Study Awarded

A \$117,175 study contract has been awarded by NASA to Ball Brothers Research Corp., Boulder, Colo., to define and determine the engineering requirements for a solar telescope mount to be used on proposed Earth-orbiting Apollo applications manned missions.

The six-month, cost-plus-fixed-fee contract is based on an unsolicited proposal by Ball Brothers for an Apollo Telescope Orientation Mount. The concept would provide for the use of astronauts to assist in positioning the mount. Final precision pointing would be accomplished automatically.

The system would provide a capability of observing the Sun with relatively large astronomical-type telescopes and in having an astronaut available to correct errors in alignment and

to make other adjustments.

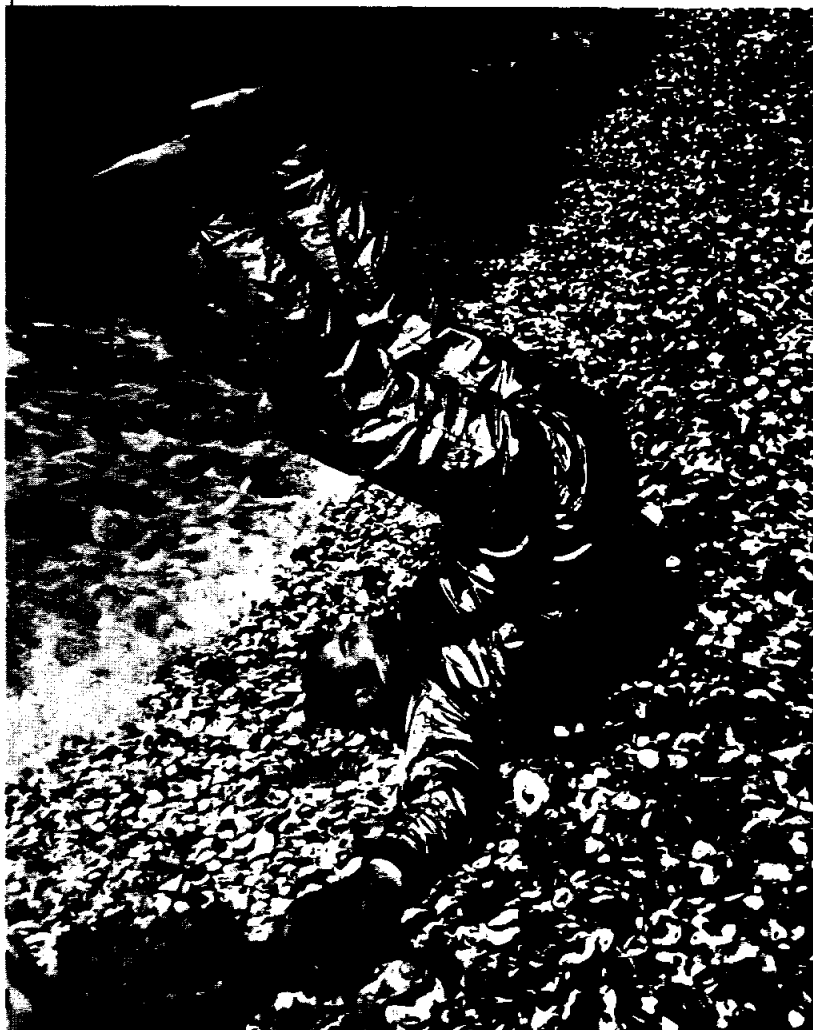
The mount would be housed in the equipment bay on the side of the Apollo Service Module.

A spar to contain instruments oriented toward solar regions of scientific interest would extend outside the Service Module on a two-axis gimbal that could automatically correct for yaw or pitch of the spacecraft. The spacecraft roll axis would be oriented so that the extension spar would remain nearly perpendicular to the plane of the Earth's orbit.

Ball Brothers, prime contractor for NASA's Orbiting Solar Observatories, will determine what hardware must be developed for the mount so that a minimum of modifications are necessary in the Service Module.

The study also will explore

Astronaut With Drainage Problem



PARASAIL TRAINING—John W. Young, backup pilot for the Gemini VI mission, assumes a topsy-turvy position to permit water to drain from inside his suit after a dunking in the water during parasail training exercises. The training exercise was held from Spoil Island on Five-Mile Pass near the Gulf. Also taking part in the training were Virgil I. Grissom, backup command pilot for Gemini VI, and Thomas P. Stafford, pilot for the upcoming Gemini VI mission.

Ling-Temco-Vought To Provide Engineering Support At WSTF

NASA selected Ling-Temco-Vought, Inc., Dallas, September 22, for negotiation of a contract to provide engineering support services at the White Sands Test Facility, White Sands Missile Range, N.M.

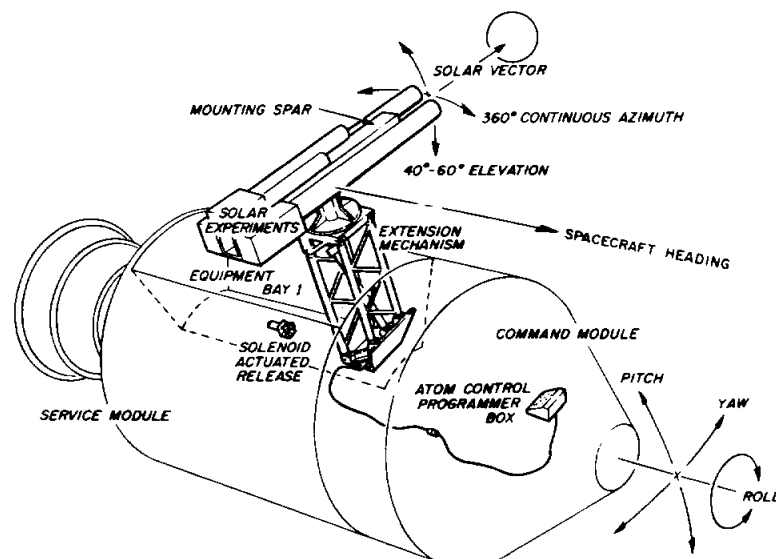
The facility is under the direction of the NASA Manned Spacecraft Center.

A one-year cost-plus-award-fee contract is to be negotiated. It will contain provisions for two additional one-year renewals. Estimated cost for the three year period is in excess of \$5 million.

The contractor will operate

five engineering laboratories at the facility to support NASA in testing the propulsion systems of the Apollo, command, service and lunar excursion modules. The laboratories are data processing, materials and processes, electrical measurements and standards, and systems design and testing. The work will require approximately 200 persons.

Ling-Temco-Vought was one of the 17 firms which responded to Requests for Proposals issued in June 1965 by the Manned Spacecraft Center.



ATOM SYSTEM IN APOLLO COMMAND/SERVICE MODULE

Long Duration Apollo Flights To Carry 5,000-Pound Experiments Pallet

Long-duration Apollo flights will carry more than 5,000 pounds of scientific experimentation aboard an experiments pallet scheduled to fly for the first time in 1968.

Thirty-six prospective bidders met at the NASA Manned Spacecraft Center September 15 for briefings at a pre-proposal conference, and may compete for two research and development contracts of \$375,000 each.

The one or two industrial contractors selected for four-month study contracts will develop a design concept, detailed specifications, mock-ups

and a firm cost proposal for the second phase of the program involving a cost plus incentive contract to develop flight hardware.

Flight hardware in this case will be an experiments pallet which will occupy one of the six pie-shaped segments of the Apollo service module. The other sections contain electrical power, environmental systems, fuel tanks and propulsion to sustain the three-man command module in space.

The pallet consists of a basic structure to support scientific experiments, interconnectors to make use of other Apollo sub-

systems, plus supplementary subsystems designed to support specific experiments.

It is intended to operate for periods of up to two weeks in space, and to be monitored and controlled by the Apollo crew. Since the service module does not re-enter the atmosphere with the crew, some of the experimentation will be retrieved by extravehicular astronauts—"space walkers"—and returned aboard the command module.

Space in the pallet will be divided and shelved to allow installation of various experimental equipment, with enough flexibility to provide special in-

stallations for particular missions. Other sections of the pallet will be devoted to subsystems, such as batteries, which will provide the power for a variety of experiments.

Experiments to be carried in long-duration Apollo flights include some which may require extension "booms" to drive experimental equipment to positions as far from the spacecraft as 25 feet. Others involve removable sections that can be retrieved by an astronaut who would leave the command module during orbital flight. Still others would record data and transmit it to the ground tracking

network via VHF and S-Band radio.

A list of experiments to be mounted on the pallet follows:

Radar scattering cross-section measurements of terrain; Temperature Sounding of the atmosphere from a manned earth orbiting spacecraft; Ultraviolet mapping of the celestial sphere in the 1230 to 1700 angstrom band; X-ray astronomy; Spark chamber for galactic gamma ray; Nuclear emulsion; Measurement of atmospheric iodine from orbit; Zero gravity studies of physical properties; and Frog otolith functions during zero gravity.

Gemini V Crew Cooper, Conrad, And Dr. Berry Presented NASA Exceptional Service Medals



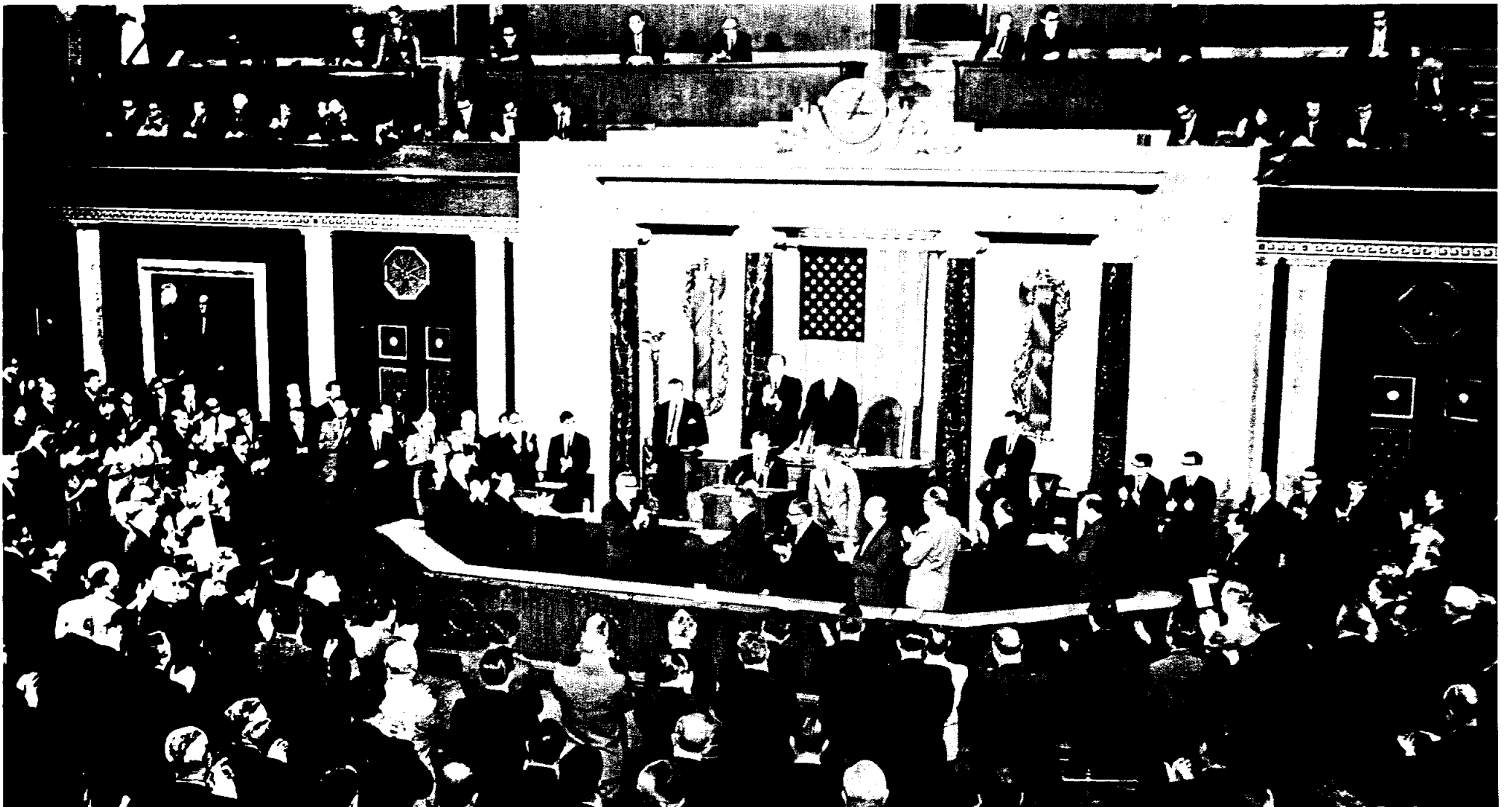
MEDAL FOR COOPER—L. Gordon Cooper, command pilot for the Gemini V flight is presented the NASA Exceptional Service Medal by President Johnson at Ceremonies in the White House September 14. Cooper's wife Trudy looks on as the medal is pinned on by the President.



DR. BERRY GETS AWARD—The NASA Exceptional Service Medal award is presented by President Johnson to Dr. Charles A. Berry, astronaut physician, in ceremonies on September 14 at the White House in Washington. Dr. Berry's wife, Dell, looks on as the award is presented by the President.



CONRAD RECEIVES MEDAL—President Johnson pins the NASA Exceptional Service Medal on Gemini V pilot, Charles Conrad, as his wife Jane looks on at ceremonies in Washington on September 14.



ADDRESSING THE HOUSE OF REPRESENTATIVES—The Gemini V crew, L. Gordon Cooper and Charles Conrad receive a standing ovation during their visit to the United States House of Representatives on September 14.

Chrysler Space Division Building Saturn-IB Boosters

"We intend to deliver stages to the launch pad as nearly perfect as human ingenuity can devise. We intend to deliver

them on schedule, and we intend to perform the job within the estimated costs."

These are the objectives of Chrysler Corporation Space Division, prime contractor to NASA for S-I and S-IB boosters in the Saturn project, as outlined by its president, H. D. Lowrey.

Under its Saturn contract, Chrysler is responsible for the design, development, qualification, test, manufacture, assembly, checkout, and static firing of the S-IB stage, and for the launch of the complete Saturn IB vehicle at Cape Kennedy.

Headquarters for Chrysler Space Division are at NASA's Michoud Assembly Facility, located on an 824-acre site in the eastern section of New Orleans. Current employment exceeds

5,000, with 3,300 at Michoud, 1,600 at Huntsville, Ala., and 600 at Cape Kennedy.

To date, Chrysler has built two of the twelve Saturn S-IB boosters contracted by NASA. Both are scheduled to launch Saturn IB space vehicles carrying Apollo spacecraft on ballistic trajectories from Cape Kennedy. One currently is undergoing launch preparation at the Cape and the other is at Michoud for post-test checkout and flight-fitting after successful static tests at Huntsville.

Prior to the S-IB work, Chrysler constructed first stages for the final two S-I boosters which launched Pegasus meteoroid detection satellites.

One of the major tasks assigned to Chrysler by NASA

was the redesign and modification of the S-I booster to provide greater payload capability needed for launching Apollo spacecraft into earth orbits.

The S-I booster provided a payload capability of 22,000 pounds, and an uprated vehicle was needed to permit full testing of the moon voyaging system, including manned rehearsals in earth orbit of the complex maneuvers required for lunar landings.

The design objective was to trim 16,325 pounds from the S-I to develop a 32,500-pound payload capability. Chrysler engineers actually cut the weight by 19,000 pounds, boosting the payload capability to 36,000 pounds.

The redesigned S-I stage, now titled S-IB, linked with the redesigned S-IV second stage from Douglas Aircraft Company, becomes the Saturn IB vehicle, capable of launching the three-module Apollo spacecraft into earth orbit.

Techniques employed in developing the Saturn IB can be applied to further uprating the vehicle in logical and orderly steps to assure its usefulness as a "workhorse" of the space age, Chrysler engineers believe.

Now in the study stage and under consideration are such projects as additional earth-orbit flight testing, space station deployment and logistics, and lunar and interplanetary flights in three-stage configuration.

Chrysler already has looked at several methods to increase Saturn IB payload and is working closely with Marshall Space Flight Center, Douglas Aircraft, North American Aviation, and

others to select the most attractive plans.

The role of Chrysler's Space Division in the Saturn program is a natural development of fourteen years' experience in the missile and space field by Chrysler Corporation.

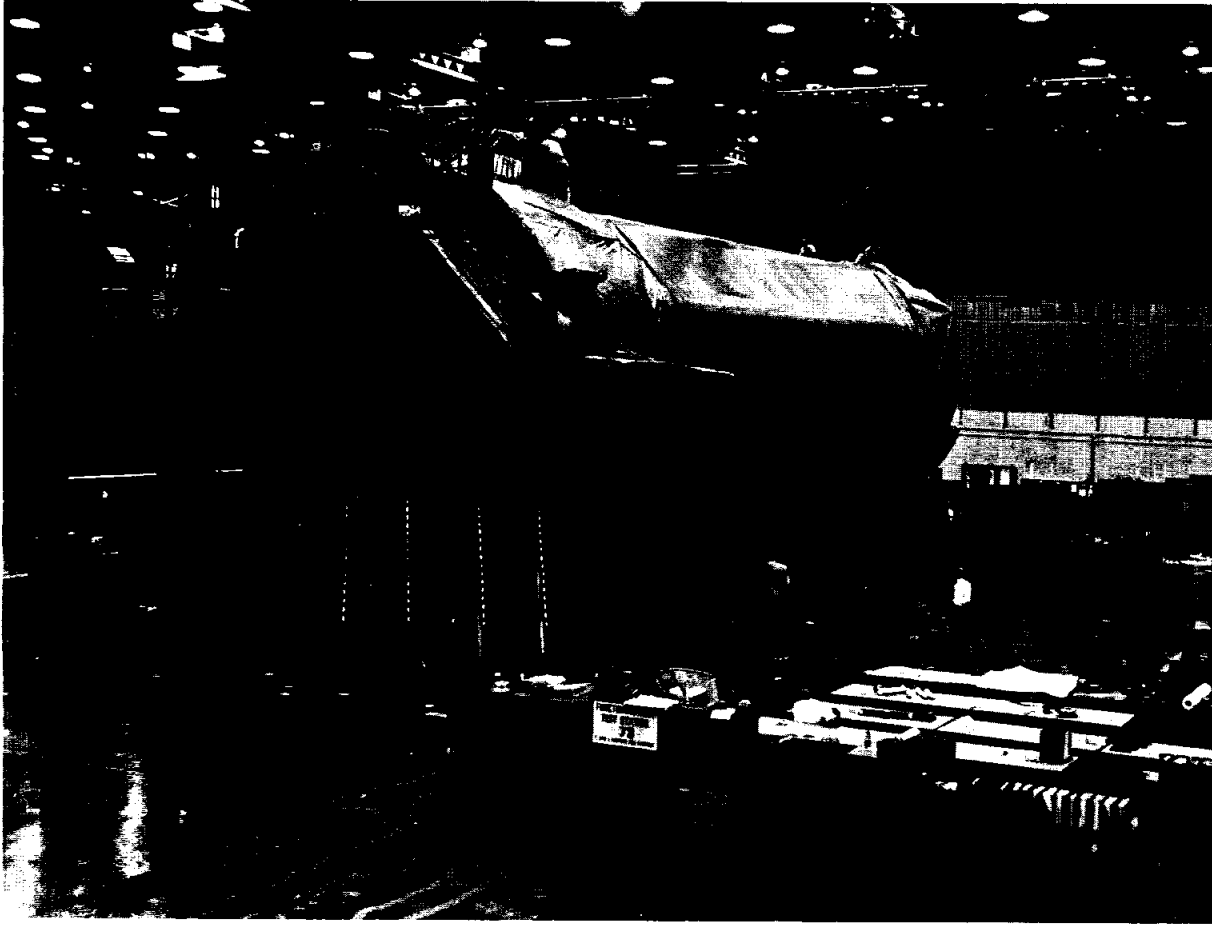
Chrysler received its first contract for the development of the Army's medium-range Redstone missile in 1952, and company engineers were integrated into all segments of the Redstone Arsenal at Huntsville.

In November 1955, Chrysler delivered its first Redstone missile to the Army. This missile was successfully fired in July 1956. When the U.S. made its first deep penetration into outer space in 1956—an altitude of 682 miles—it was with a Jupiter-C missile.

The following year, Chrysler was named the prime contractor for the Jupiter missile system. In this same period, the first Redstone with a Chrysler-built and



H. DOUGLAS LOWREY
president, Chrysler Space Division

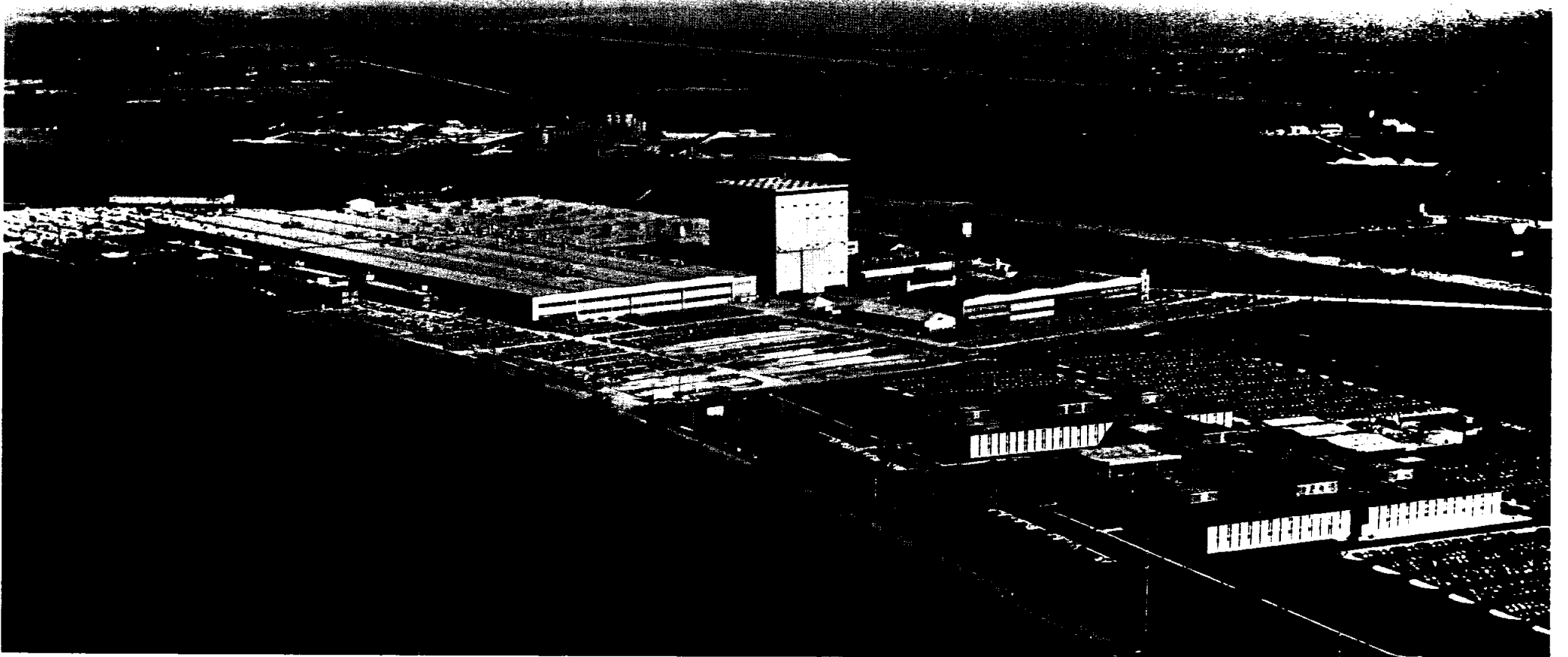


SHIPMENT PREPARATIONS—A plastic protective covering is placed around Chrysler's S-IB booster in preparation for shipment to Cape Kennedy in February 1965. The booster launched Pegasus 2 meteoroid detection satellite into orbit.



WILLIAM S. BLAKESLEE
vice president & group executive
Defense-Space
Chrysler Corporation

EDITOR'S NOTE: This is the third in a series of articles being presented to acquaint the employees of the Manned Spacecraft Center with the contractors who make the Saturn launch vehicles and related equipment that will be used in the Apollo program. The material on these two pages was furnished by Space Division, Chrysler Corporation.



MICHOUD—NASA'S Michoud Assembly Facility occupies 824-acre site in eastern New Orleans. Large structure in left center is manufacturing building, where Chrysler Corpora-

tion Space Division assembles Saturn S-IB boosters and the Boeing Company assembles first stages for the Saturn V. To the right is the engineering building, a new addition to the plant.

Space News **ROUNDUP!**

MANNED SPACECRAFT CENTER, HOUSTON, TEXAS

EMPLOYEE NEWS

Recognition Plaque Presented



CITATION—Stuart H. Clarke (left) former chief, of the Manned Spacecraft Center Personnel Division, was recently presented a plaque for his work with summer intern students at the Center. Dr. E. B. Evans, president of the Prairie View A&M College presents the plaque to Clarke during a luncheon at the college. The citation was for Clarke's work with A&M students during summer intern programs at MSC. Clarke has accepted a position at NASA Hq, as deputy director, Personnel Division, effective August 29.

Performance Award



SSP AWARD—William J. Nesbitt of the NASA St. Louis office is presented a Sustained Superior Performance award by Charles W. Mathews, manager, Gemini Program Office, Manned Spacecraft Center. The presentation was made in St. Louis.

Softball League Champions Decided In Playoff



SLOW PITCH CHAMPIONS—In the Slow Pitch Softball League, the Animals won the championship playoff with the Hustlers. The Animals with their team trophy are (front row l. to r.) Edell Lydia, Daryl Lostak, Richard Wadle, Gene Ricks, John Miles (team manager), Keith Hall, and Claude Graves. Standing (l. to r.) are Gary Pollan, John Richardson, Tom Rasnick,

MSC United Fund

Aircraft Operations First To Complete Drive

The first complete report in the Manned Spacecraft Center's United Fund drive was received September 22 from the Aircraft

Operations Office with 100 per cent participation and 148 per cent of their goal.

Team captain for this group is



LISTEN!—Your United Fund contribution helps this little fellow hear sounds he's never heard.

Supply Branch Opens Service Centers Tailored To Needs Of Center Units

The Supply Branch, Administrative Services Division, recently introduced to MSC the first two of some 12 supply service centers expected to be in full operation during the next six months.

One center, serving elements occupying Buildings 1 and 2, is located in Building 2; the other, serving elements in Building 30, is located in that building.

Supply service centers are designed to materially reduce the user's workload experienced in acquisition and management of property. Each of the centers established will serve a particular organizational element or elements and will be tailored to meet the particular needs of the units served.

Generally, the centers will provide the following services: (1) immediate issue of common, frequently used administrative supplies and small items of equipment; (2) preparation and submission of requisitions and purchase requests for supplies;

(3) processing of paperwork incident to turn-in of excess personal property; and (4) maintenance of all custodial records incident to management of capitalized and controlled property.

In addition, centers supporting technical elements will operate facilities for storage and issue of bench stock and for control of handtools and related instruments.

Operation of the centers will be under the supervision of A. C. Chance, a recent arrival at MSC, who heads the Customer Service Section of the Supply Branch. The center located in Building 2 and managed by William Folkes can be reached on Ext. 5186; the one in Building 30, managed by Jesse Press, can be reached on Ext. 2364. Both will honor telephone requests to the maximum extent possible.

Locations and telephone numbers of additional centers will be announced as they become established.

Jane Braun and the 23 people in her unit pledged a total of \$664.

Phil Hamburger, chairman of the MSC UF drive, urged all team captains to concentrate on contacting each individual at the Center and to make certain that all pledge cards are filled out and returned.

Hamburger said the drive seems to be progressing at a satisfactory rate. We want to make this year's United Fund drive an even greater success than last year's, Hamburger stated.

UF vice chairmen assisting Hamburger with the drive here at the Center are Stan Weiss and Raoul Lopez.

Goal for this year's United Fund drive is \$60,000.

Radio Control Model Airplaners To Meet Oct. 6

The Radio Control Model Airplane Club for MSC and MSC-contractor employees, will hold its monthly meeting at 5 p.m., October 6 in Room 651 of Building 2.

This second official meeting of the group will feature a technical discussion of the "Digitrio" proportional system which is currently being featured in a well known radio control publication.

Anyone who is or has been interested in any phase of radio control building and flying is urged to attend this meeting. For additional information, call Bill McCarty, Ext. 5411; Bill Malarly, Ext. 2297; or Tim Brown, Ext. 4374.

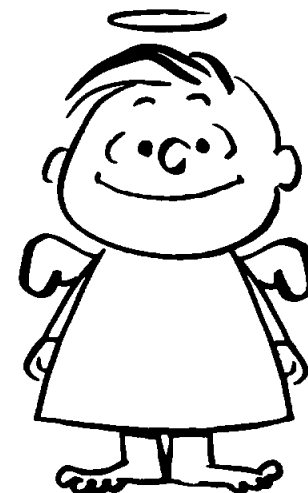
According to Tim Brown, considerable flying activity from the "MSC airport" has been taking place during the past month.

Women's Basketball League Spots Still Open

Team and individual spots in the basketball league for women here at the Center are still open and the original deadline for entering has been extended until October 15.

Interested parties are asked to call Dave Mullins, MSC sports coordinator, at Ext. 4521. Games will be held in the Ellington AFB gym.

EVERY GOOD GUY



GIVES THE UNITED WAY

Don Grammer, Ivan Johnson, Bob Kadlec, James Adams, James R. Elk (assistant team manager), Harvel Mashburn, and John Heerey. In the Fast Pitch division, the 747th Rams from Ellington AFB and the Colt 38's of the Mission Planning and Analysis Division were declared co-champions of the league.

Scenes From The September 25 MSC Employees Picnic



President Proclaims October 3-9 'Employ The Handicapped Week'

The week of October 3-9 has been proclaimed by President Johnson as "National Employ the Handicapped Week."

Although the program for employment of the handicapped is a continuing one on a year around basis, it is appropriate at this time to take special note of the benefits derived from utilizing handicapped persons.

According to Carl Maxey, MSC Personnel Division, coordinator for the Employment of the Handicapped, there are over 100 employees at the Manned Spacecraft Center with major

physical handicaps. These persons perform well a variety of assignments throughout the Center, both in technical and administrative fields.

The employment records of handicapped workers show why it is good business to hire them, Maxey said. When properly placed, they have better safety records, better production records, and better stick-to-the-job records than the able-bodied. It seems clear then that our participation in this program benefits MSC as well as our handicapped citizens.



Federal Accountants Association Invites MSC Employees To Meeting

Dr. I. E. McNeill, head of the Accounting Department at the University of Houston addressed the Houston chapter,

Federal Government Accountants Association, on "New Developments in Accounting Education" at their September meeting.

Dr. McNeill and his associates have revised and streamlined the basic approach to introductory accounting courses. He reported that this is the first major change in teaching methods in many years.

Ralph Rhodes, FGAA program chairman, announced that Dr. John McFarland, superintendent of the Houston Independent School District will address the Chapter at its October meeting on the school district's efforts on "Project Head Start." This Chapter has previously offered its assistance as a public service project to local area "Head Start" officials.

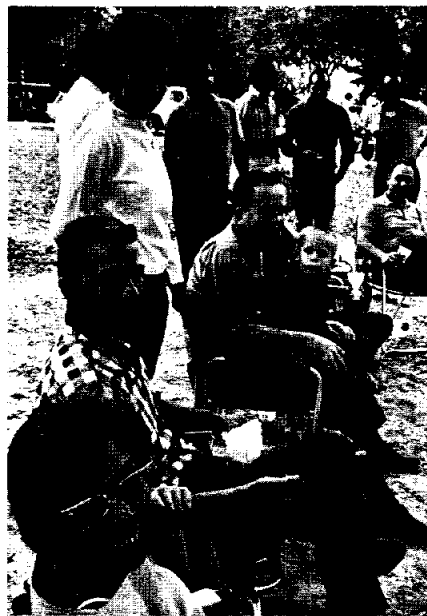
Interested MSC personnel are invited to attend the meeting, to be held at Bill Bennett's Restaurant in Houston, on Tuesday, October 19. Reservations may be made with Les Thorn, Ext. 7771.

Aero Club Oct. 12 Meeting To Feature Film

The Aero Club here at the Center plans to show the film "Wings To Baja" and to issue a new list of aircraft available in this area to those attending the October 12 meeting.

Meeting time will be at 5 p.m., in the auditorium of Building 6 in the Nassau Bay office building complex across from the Center. All interested in flying are invited to attend.

Don Bray, the club's information officer has requested Aero Club members to supply him with information and announcements that may be of interest to other club members. His extension is 3754.



MSC BOWLING ROUNDUP

MSC COUPLES LEAGUE		
Standings as of September 14		
TEAM	WON	LOST
Intimidators	7	1
Almots	6	2
Bowlernauts	6	2
Sociables	5	3
Four Friends	4 1/2	3 1/2
Idgits	4	4
Spastics	3 1/2	4 1/2
Eight Balls	3	5
Aces	3	5

LBD		
Fireballs	2	6
Fabulous Four	2	6
High Game Women: Lois Tilson 200, Verra Lantz 199.		
High Game Men: Frank Morgan 225, Ron Durkee 222.		
High Series Women: Shirley Yeater 529, Carole Boudreau 510.		
High Series Men: Frank Morgan 607, Ron Durkee 593.		

rs For Apollo

produced tactical warhead was successfully fired.

Chrysler followed these achievements with missiles which sent two American satellites into orbit in 1958. Later that year, the first high altitude tests of a nuclear detonation were delivered by a Chrysler Redstone. And by the end of 1958, a Juno II space vehicle—a modified Jupiter—penetrated 65,000 miles into space.

Between 1959 and America's first manned space flight in 1961, Chrysler helped the U.S. accelerate its missile and space program. America's first successful space flight carried two monkeys to an altitude of 350 miles and 1,700 miles down range at the

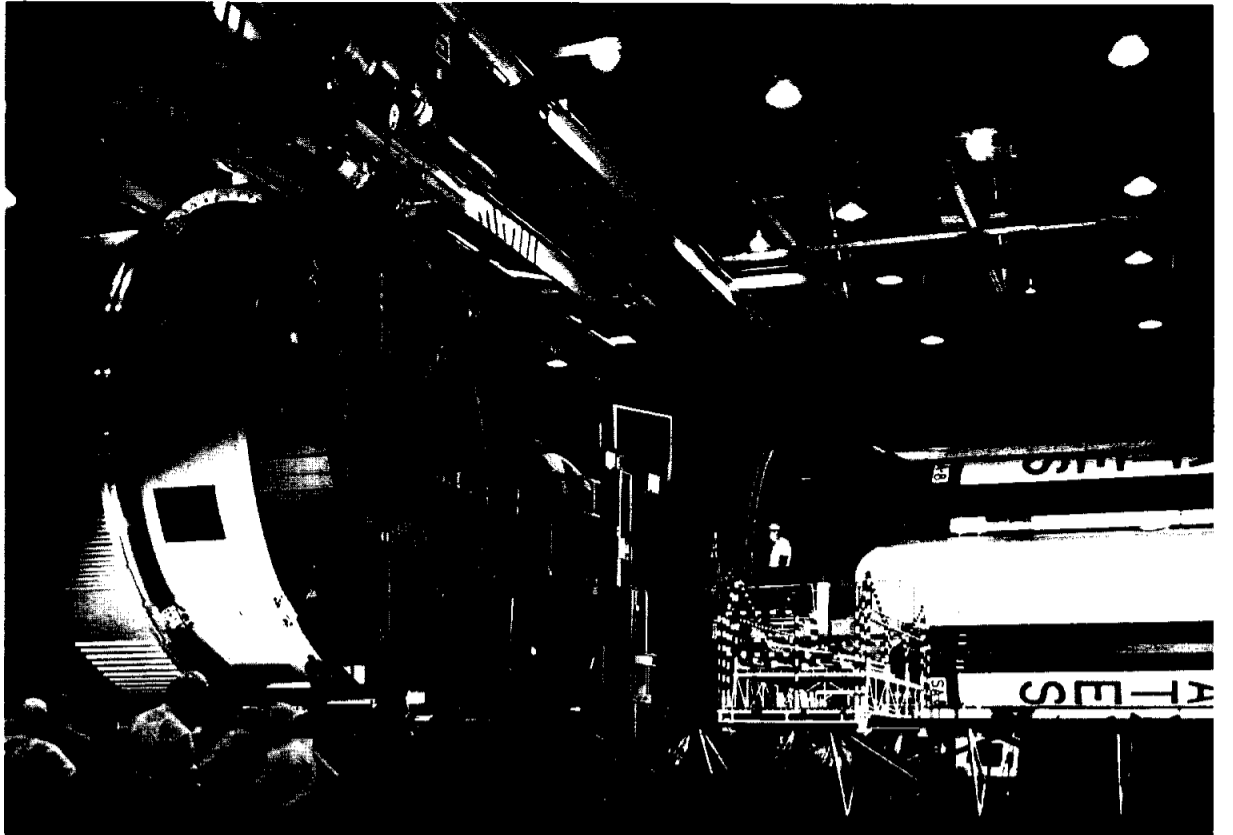
top of a Jupiter missile.

The first Project Mercury spacecraft, an unmanned vehicle, made a 290-mile sub-orbital flight with the aid of a Chrysler-produced Redstone booster.

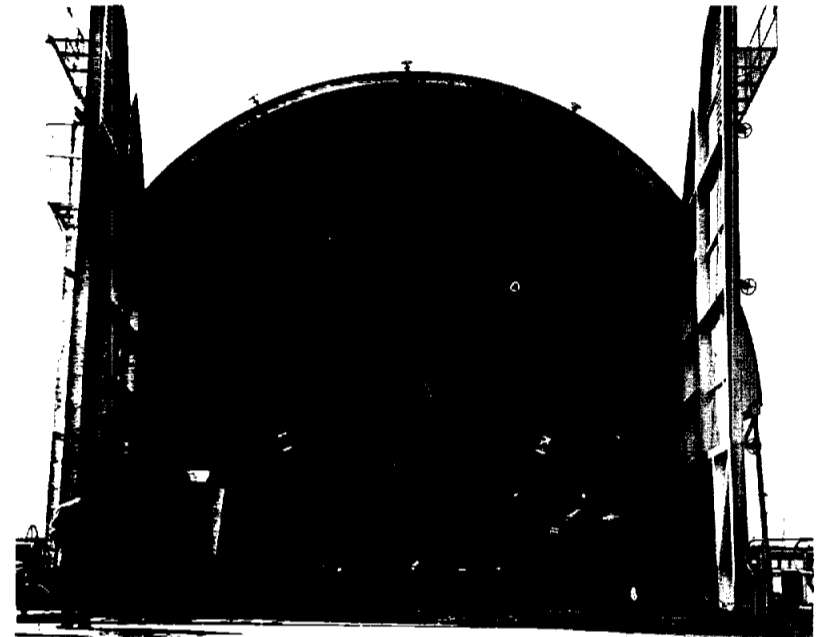
Chrysler also built the launch vehicles which sent the first two Mercury astronauts on sub-orbital flights in 1961.

The Chrysler-built Redstone achieved a reliability record of 95 per cent successful flight and all Chrysler-built Jupiters have been successful.

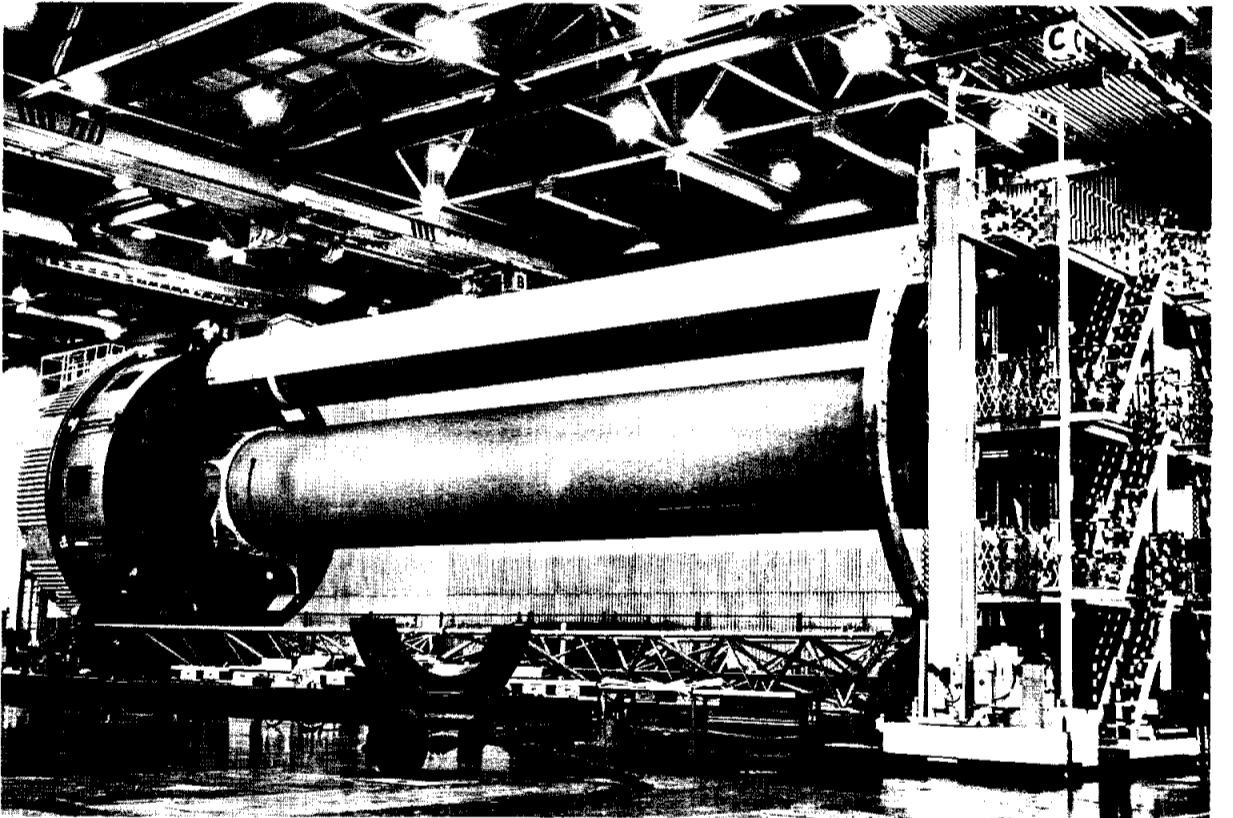
This reliability record was continued in the two Saturn vehicles Chrysler launched. Both left the pad on successful flights at 0:00 of the programmed countdown.



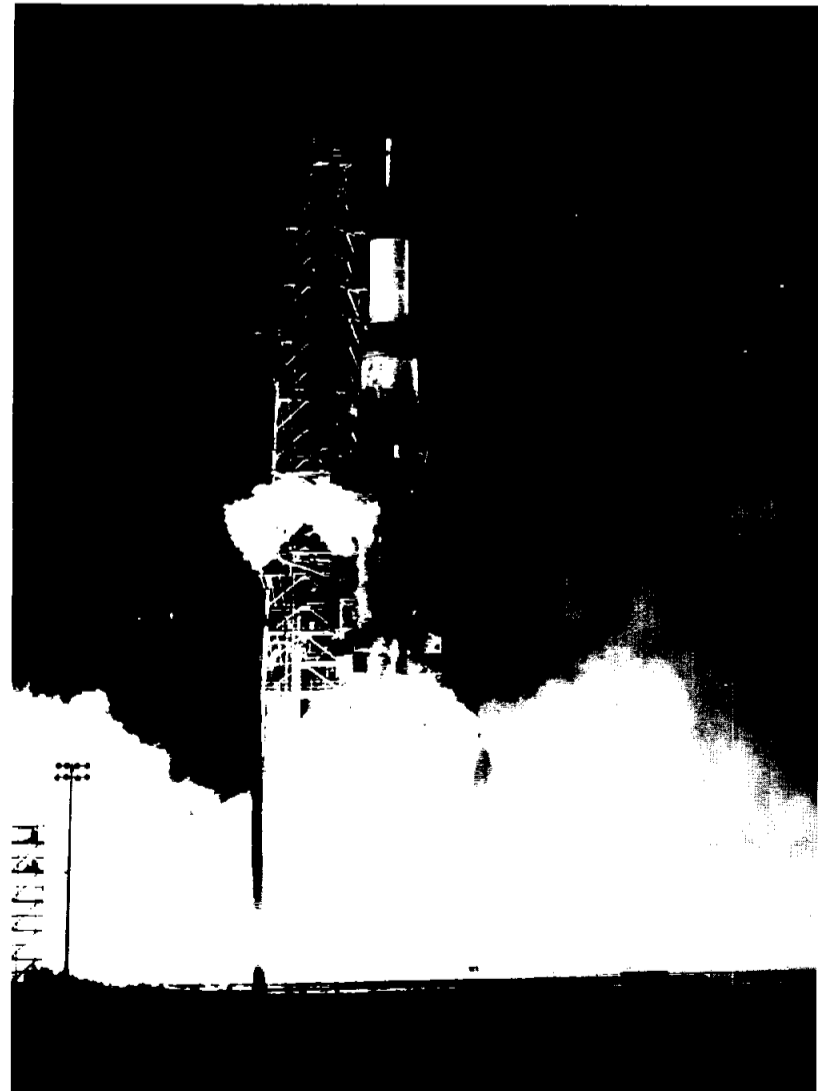
SATURN-I BOOSTERS—This interior view of Michoud Assembly Facility shows portion of area assigned to Chrysler Space Division. In various stages of assembly are the two Saturn S-I boosters constructed by Chrysler. The other eight S-I's, prototype of the lighter, more powerful S-IB, were built at Marshall Space Flight Center, Huntsville, Ala. The S-I series came to an end with launching of Pegasus 3 meteoroid detection satellite on July 30 by SA-10, shown here at left in initial assembly.



WATER TRANSPORT—Saturn booster S-1-8 is shown on specially designed barge which carried it to Cape Kennedy for launching of Pegasus 2 meteoroid detection satellite. Barge is also used to transport boosters to and from Huntsville, Ala., where Saturn boosters are static tested.



S-IB BOOSTER ASSEMBLY—Under assembly here is the first of 12 Saturn S-IB boosters to be built by Chrysler Corporation Space Division at the Michoud Assembly Facility. A 70-inch diameter fuel tank, one of eight to be clustered around the center 105-inch diameter tank, is put into position.



SATURN LAUNCH—The first industry-produced Saturn I booster, built by Chrysler Space Division at Michoud Assembly Facility in New Orleans, launches a 3200-pound Pegasus meteoroid detection satellite into orbit from Cape Kennedy on May 25, 1965. This was the ninth of 10 Saturn I flights, all of which were 100 per cent successful.



STATIC TEST—The first Saturn S-IB booster, built by Chrysler Space Division at Michoud Assembly Facility in New Orleans, is successfully static test fired at Marshall Space Flight Center in Huntsville, Ala.

The SPACE NEWS ROUNDUP, an official publication of the Manned Spacecraft Center, National Aeronautics and Space Administration, Houston, Texas, is published for MSC personnel by the Public Affairs Office.

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On The Lighter Side



Space News Of Five Years Ago

OCT. 2, 1960—Jet Propulsion Laboratories announced that the 85-foot receiving antenna for space tracking at Woomera, Australia, would be operational by Nov. 1, 1960.

OCT. 3-21, 1960—The third and final major training program in preparation for the first manned Mercury Redstone flight was conducted for the astronauts at the Aviation Medical Acceleration Laboratory, Johnsville, Penn. No difficulties were encountered; a decided improvement in the performance of three-axis hand-controller tasks by the astronauts was noted. The Mercury-Redstone 3 (MR-3) flight activities were adhered to as closely as possible—actual spacecraft couches were used, a production hand-controller assembly was installed, the latest model pressure suits were worn, and the environmental control system was equipped with a freon coolant. Failures in spacecraft sequencing were introduced which required the astronaut to initiate an appropriate manual override.

OCT. 7, 1960—Federation Aeronautique Internationale meeting in Barcelona, Spain, accepted the first rules to govern establishment of official records for manned spaceflight. The first record to be recognized must be

at least 100 km, and later records must exceed existing record by 10 per cent. Four categories for records are duration of flight, altitude without orbiting earth, altitude in orbit, and mass lifted above 100 km.

OCT. 12, 1960—Dr. T. Keith Glennan, NASA administrator, announced that communications satellites developed by private companies on a commercial basis would be launched by NASA at cost to assist private industry in developing a communications network.

OCT. 13-14, 1960—DES-FLOTFOUR personnel, designated previously by the Department of Defense to provide recovery support for Project Mercury, conducted a communications exercise in the recovery room of the Mercury Control Center at Cape Canaveral, Fla. This was the first time these communication facilities have been used since the installation of the equipment.

OCT. 13, 1960—A USAF Atlas launched at the Atlantic Missile Range placed a nose cone containing three black mice, 650 miles up and 5,000 miles downrange at 17,000 mph. The nose cone was recovered in the target area near Ascension Island, the three mice surviving the flight in "good condition."

SPACE QUOTES

GEMINI 5 PROVES MAN IN SPACE TO STAY. President Lyndon B. Johnson, Press Conference, Johnson City, Texas, 28 August 1965.

"The successful completion of the eight-day, three-million-mile flight of the Gemini V proves, I think, not only man's capacity for endurance in space, but it proves that man is in space to stay.

"Only seven years ago we were neither first nor second in space—we were not in space at all. Today the capacity of this country for leadership in this realm is no longer in valid question or dispute any place in the world. Openly, proudly, we are proceeding on our course, willing always to share our knowledge and our gains with all mankind. So, I would repeat, and I would renew again this afternoon America's invitation to all nations to join together to make this adventure a joint adventure.

"Gemini is but the beginning. We resolve to have many more such journeys—in space and on earth—until man at last is at peace with himself."

Welcome Aboard

During the last reporting period, 55 new employees joined the Manned Spacecraft Center.

Center Medical Office: Paul R. Foote and William B. McCollum.

Administrative Services Division: Atlas C. Chance, Richard Calda, Wayne E. Etzel, and Anne F. Walsh.

Procurement and Contracts Division: Brenda S. Black and Linda M. Crawford.

Technical Services Division: James R. Banister, Dennis W. Corbett, William S. Cowart, Thomas E. Davis, Graydon E. Owens, Alan R. Riley, J. Eugene Scott, Daniel F. Welsh, and Michael K. Woodcock.

Management Services Division: Melody J. Padgett.

Engineering Division: Jesse L. Gamble, Glenn W. Spencer, Robert H. St. John, and Robert W. Timme.

Personnel Division: Linda E. Boessling, Floyd D. Brandon, and Francis S. Miceli.

Resources Management Division: Frances E. Rhea.

Flight Crew Support Division: Douglas J. Hance, Jesus C. Hinojosa, Thomas H. Kaiser, and Jerry W. Schiller.

Crew Systems Division: Wayne C. Barksdale and Manuel Rodriguez.

Computation and Analysis Division: Peggy L. McBride.

Guidance and Control Division: John W. Sunkel and David E. Tadlock.

Propulsion and Power Division: Donald R. Blevins, John W. Griffin, and Dan S. Trent.

Advanced Spacecraft Tech-

Out Of Texas' Past . . .

(EDITOR'S NOTE: To acquaint MSC employees with the rich historical background of the Galveston Bay area, and of Texas in general, a series of historical articles prepared by the Historical and Library Services Branch will appear in the Roundup.)

William Sydney Porter, familiar to millions as O. Henry, one of the most widely read, best loved and most romantic literary figures ever to appear in America, was a Houston newspaper columnist in the gay nineties. The HOUSTON POST paid him \$20 a week to write a lively feature called "Tales of the Town." Dapper and mustached, he lived in a shabby flat on Caroline Street with his pretty wife Athol and their daughter Margaret.

Porter's life probably was a greater story than any he ever wrote, and yet he finally became the most highly paid short story writer of his day. His life was as tragic as Poe's, his wit as keen as Mark Twain's, his prose as rollicking as Kipling's verse. Critics have called him the American Maupassant.

On St. Valentine's Day, 1896, Porter was arrested, taken to Austin, where he had worked as a bank teller before coming to Houston, and charged with embezzling \$4700 from the First National Bank. He bitterly denied the charge. Austin friends posted his bond, and he returned to Houston to find Athol prostrate with shock and his career destroyed.

His wife and daughter returned to Austin to live with Athol's parents, and his once-popular newspaper column appeared irregularly. The last one was published on June 22, 1896.

Summoned to trial in July, Porter panicked. On the advice of some newspaper associates, he fled to New Orleans and took passage on an empty banana ship to Honduras, where he was safe from extradition.

To his tropical sanctuary in December came a box containing cakes, candies and his overcoat! An accompanying letter from his mother-in-law said: *Come home and clear your name before it's too late. Athol packed your Christmas box running a fever of 105.*

nology Division: Audie C. Berry and Paul W. Visser.

Flight Control Division: Bruce H. Fruechting and J. Terry Wilson.

Landing and Recovery Division: Stephen O. Musselman.

Mission Planning and Analysis: Gary N. Metz and Wesley D. Ratcliff.

Flight Support Division: Chester M. Gross, Matthew J. Quinn, and James W. Satterfield.

Apollo Spacecraft Program Office: Peggie J. Boyd, Sherra A. Clark, Judy K. Collins, Gracie V. Stolar, and Mary A. Thomas.

White Sands Test Facility: Genevieve C. Jackson and Margaret I. Triviz.

Porter came back to Texas in time to say farewell to Athol before her death at the age of 29. In a room over his father-in-law's store he turned his heart-break into his first successful fiction story, *The Miracle of Love Canyon*, which he sold to the McClure Syndicate.

Porter went to trial in February of 1898, entering a plea of innocent, but refusing to testify. Evidence showed that he had inherited a badly kept set of books in a carelessly managed bank, where overdrafts were continuously allowed and officers took money from their personal accounts without bothering to write checks.

One biographer wrote: *The government's case against Porter was as untidy a mishmash as the bank's slovenly operations. Such a case today would be thrown out of court.*

But Porter was convicted. On April 21, 1898 — San Jacinto Day in Texas — the United States declared war against Spain. The next day Will Porter was taken to the federal penitentiary in Columbus, Ohio.

A man of many talents, Porter was a registered pharmacist. In the prison dispensary he wrote some of his finest stories, signing them "O. Henry," and selling them to *McClure's Magazine* and other publications. With time off for good behavior, he was released on July 24, 1901, having served three years and three months of a five-year sentence.

Soon he was reunited with his daughter, who was living with Athol's parents in Pittsburgh. Then 12 years old, Margaret did not know that her father had been in prison, for in his letters he simply had said that he was working in a drugstore.

Will and Margaret moved to New York, and the big city gave them all of the good things of life that Houston and Austin had denied them. In 1904 the ex-convict published 66 stories, and magazine editors begged him for more. O. Henry became as famous as Teddy Roosevelt and rich enough to send Margaret to Belmont College and to live, himself, in a luxurious Irving Place apartment.

Perhaps Will Porter, ex-Houston newspaperman, was not quite the artist that Poe was—or Mark Twain or Kipling. But O. Henry gave the American short story wings and a gasoline engine, a thousand wisecracks and a glossy wisdom that enthroned him among the great. He created the Cisco Kid and Jimmy Valentine and colored our vernacular with phrases like "Bagdad-on-the-Subway."

Some critics have called his stories glib and superficial. But Porter never pretended to be a literary giant, although he was the acknowledged master of the slick plot and the gimmick ending. Of his own work he once said—speaking also of the plain average American man and woman—"With these I love to sit upon the ground and tell sad stories of the death of kings."

Dunking In Oil Provides Data On Zero Gravity Exposure

A 10-day dunking in tubs of cosmetic oil has done little for the manly beauty of 12 college students but has provided a lot of data for space scientists.

Ten days of bed rest were also prescribed for each of the students as part of a three-month study conducted for the NASA Manned Spacecraft Center by the Douglas Missile & Space Systems Division in Santa Monica, Calif.

Douglas MSSD scientists are now evaluating the data to determine whether the silicone oil "baths" are superior to bed rest as a method of simulating the effects of prolonged weight-

Unified S-Band Communication System Contract Awarded

A contract has been awarded by the Manned Spacecraft Center for the development, fabrication, and feasibility demonstration of a spacecraft-to-spacecraft Unified S-Band (USB) rendezvous and communications systems.

The Western Center of the Military Electronics Division, Motorola Inc., will design the system around the S-band transponders currently being produced by Motorola for the Apollo program.

Engineers at Motorola have for some time been exploring the possibility of expanded utilization of the Lunar Excursion Module and the Command Service Module transponders. Such utilization would include, in addition to spacecraft-to-earth communications simultaneous interspacecraft voice communications, data transfer and an automatic intermodule tracking capability.

Under the contract, Motorola will develop and test an engineering model of such a system. The major components are a high gain monopulse tracking antenna, a ranging unit to provide range, range rate, and angle measurements required for rendezvous, and two considerably advanced USB transponders. The first is a standard ratio-dual frequency transponder which will also operate as a transmitter/receiver portion of a rendezvous sensor. The second is a dual ratio-dual frequency design which will operate as a standard ratio or inverse ratio or as a transmitter/receiver portion of a rendezvous sensor.

lessness.

Fluid immersion and the more conventional bed rest technique are the two principal experimental environments on earth which can provide data on the effects of prolonged exposure to zero gravity, such as in a space station.

After both the 10-day immersion in oil and the 10 days of bed rest, the students were checked for vascular and other symptoms of physiological deconditioning similar to those observed during post-flight examinations of American and Russian astronauts.

The 12 students, all from colleges in Southern California, were dubbed "centrinauts" during a space research experiment last year when they were whirled on a centrifuge at Douglas MSSD to evaluate the therapeutic merits of using an artificial gravity device in a space station.

In the centrinauts' new experiment, a centrifuge was used following each subject's oil and bed rest stint. He was placed in the centrifuge and his tolerance tested to rotations creating up to eight times the force of gravity.

Format for the experiment

was for three of the centrinauts to spend 10 days in oil up to their chins while three others were in bed for an identical period. Simultaneously two other groups of three each were put through a conditioning regimen in preparation for oil and bed rest sessions.

After completing a 10-day oil bath or bed rest session, each trio was off duty for six weeks, the time felt to be essential for reconditioning. Then the groups returned and switched assignments—the oil bath centrinauts spending 10 days in bed and the bed rest subjects soaking in oil.

The conditioning phase before the oil baths or the bed rest included workouts on the bicycle ergometer and the treadmill. These exercises established a high level of metabolic activity so that deconditioning could be better observed during the 10-day periods of inactivity.

Various functional and diagnostic tests were conducted prior to, during and after the 10-day sessions.

The oil, a fine grade of silicone used widely in cosmetic preparation, was chosen as the immersion medium because it precludes problems of skin macera-

tion and infection observed during prolonged water immersion.

In the tubs, a processing unit filtered and deodorized the circulating silicone, which was heated to near body temperature. The oil is inert, stable, bacteriostatic and filterable.

During the experiment, the centrinauts remained constantly in a horizontal position, although not necessarily on their backs, so that the long axis of the cardiovascular system was maintained horizontally.

Three nurses were continuously on duty, monitoring the students and providing routine "bed fast" nursing care. The daily menu consisted of a 2100-calorie diet, served, of course, to the subjects in bed and in the tubs.

The 10 days in oil or bed rest were brightened somewhat by television and radios at the disposal of the centrinauts. Some of the men read. Others played chess. One centrinaut did homework on a pilot training course.

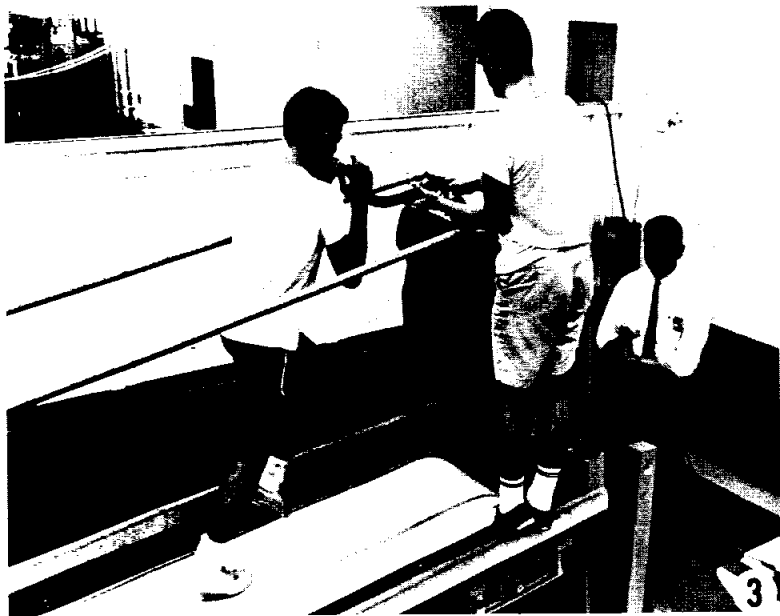
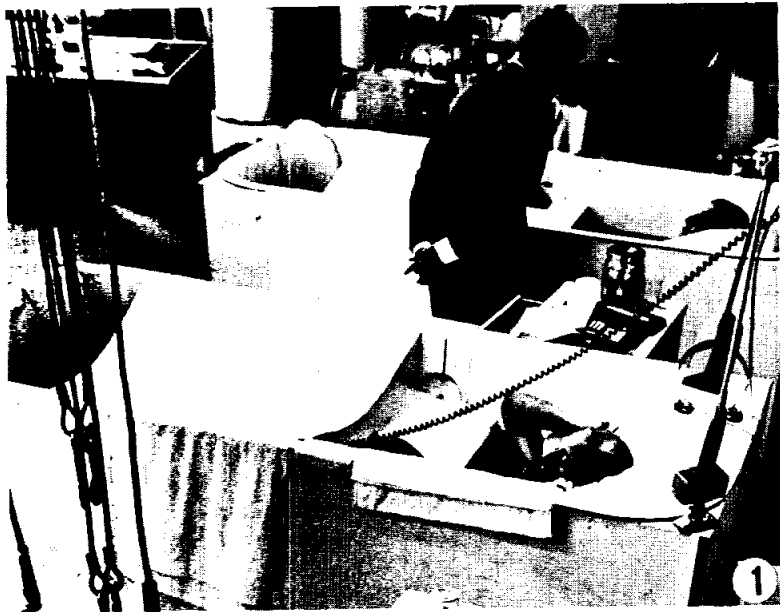
A diversionary highlight was arranged by study director Dr. W. J. White of Douglas' Advance Biotechnology Department. He invited members of

Hollywood's Theater 40 professional classical workshop to the Douglas laboratory to present Shakespeare's "The Winter's Tale" to the students.

The cast happily obliged, donating time and talent and appearing in what members agreed was their most unusual command performance. A stage was erected in front of the oil bath subjects, whose tubs could not be moved. They were in the "box seats." The three bed-rest centrinauts were wheeled up behind. The few others fortunate enough to be admitted to this exclusive engagement—the nurses, the doctors and a handful of biotechnology attendants—got the "cheap seats" behind the centrifuge pit or settled for standing room only.

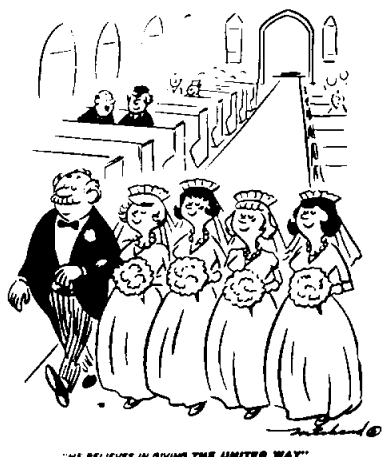
The centrinauts, who received approximately \$75 daily, plus board and room, originally were recruited from the University of California at Los Angeles on a voluntary, paid basis—if they could meet the rigid physical and mental requirements.

Now they come from several Southern California colleges and universities. Some of the original centrinauts still work with the group.



TEN DAYS IN OIL—Douglas "centrinauts," a group of students from colleges in Southern California, were immersed in oil in their latest biotechnological experiment at the Douglas Missile & Space Systems Division, Santa Monica, Calif. As part of a three-month study for the National Aeronautics and Space Administration's Manned Spacecraft Center, the centrinauts soaked in silicone oil for 10 days (photo No. 1) and spent 10 days in bed. Purpose of the research was to compare the two methods of simulating physiological deconditioning resulting from prolonged exposure to weightlessness of outer space. In another phase of the study, a centrinaut just out of the oil is prepared for a whirl on the Douglas centrifuge (photo No. 2). This was done before and after the

10-day sessions to determine tolerance to re-entry conditions. A regimen of exercise on a treadmill (photo No. 3) and other devices conditioned the centrinauts for the oil bath and bed-rest routines. During the 10-day periods the centrinauts read, watched television or listened to radio. Recreational highlight occurred when centrinauts in their tubs and on their beds watched Shakespeare's "The Winter's Tale" presented in the biotechnological laboratory by members of Hollywood's Theater 40 professional classical workshop (photo No. 4). The players donated their time and talent at the invitation of study director Dr. W. J. White of Douglas MSSD's Advance Biotechnology Department.



Space News **ROUNDUP!**

SECOND FRONT PAGE

Mariner IV Still Functioning Long After Mission Ends

The Mariner IV spacecraft, having achieved its mission objectives and now in its 307th day of flight, will receive a command from Earth today, concluding—possibly only temporarily—the National Aeronautics and Space Administration's longest and most complex deep space mission.

Since launch Nov. 28, 1964, Mariner IV has transmitted to Earth nearly 50 million engineering and scientific measurements on the environment of interplanetary space and in the vicinity of Mars.

It flew past Mars last July 14 at an altitude of 6118 miles, recording the first close-up pictures of the planet's surface.

After today when the ground command switches the spacecraft's transmitter from the high-gain directional antenna to the omni-directional antenna, telemetry from Mariner IV will cease.

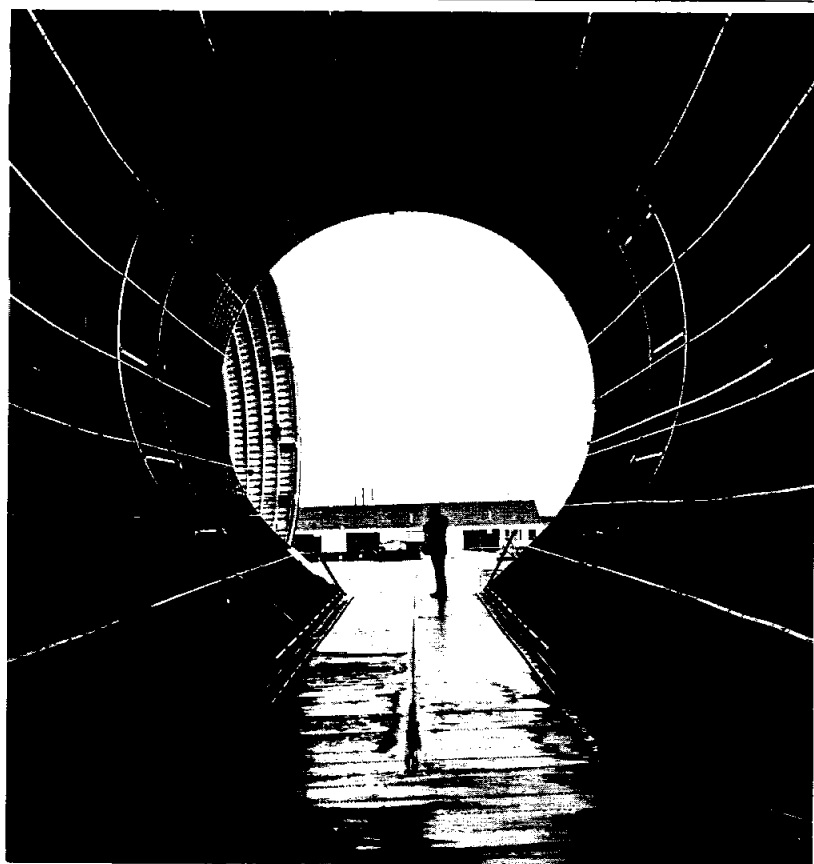
Although today will mark the end of useful telemetry between Mariner IV and Earth during 1965, project officials at NASA's

Jet Propulsion Laboratory said the spacecraft will continue transmitting and may renew its radio link with Earth in 1967.

During the next two years, it will be possible to track Mariner IV only with a new 210-ft. antenna, which will begin operation in Spring 1966, at the Goldstone Space Communications Station in California. No telemetry will be received during this period, but periodic tracking of the spacecraft as it orbits the Sun will determine whether or not its transmitter is still operating.

Tracking data during the long cruise will help in the evaluation of the new giant antenna system and hopefully will allow trajectory analysts to increase the accuracy of the known relative positions of Earth and Mars.

By mid-1967, Mariner IV and the Earth will be close enough to attempt to resume communications using the low gain antenna. Closest approach to Earth will be on Sept. 7, 1967 at a distance of 29 million miles.



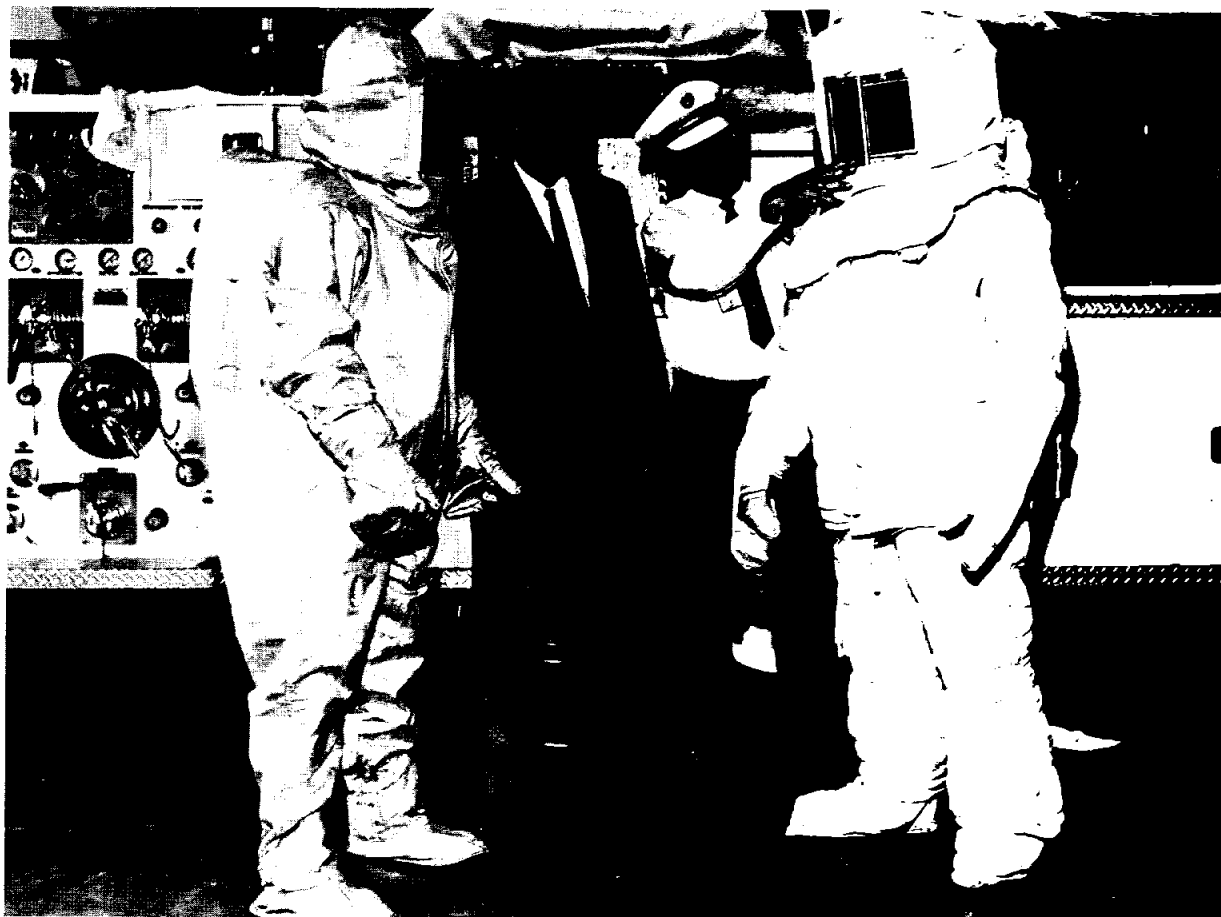
SUPER GUPPY—The interior of the Super Guppy aircraft is shown above in this view taken from the aft end. In the view at lower right, the Super Guppy aircraft is shown with the nose section hinged to the side to permit loading of over-sized cargo. Photos were taken on a recent visit of the Aero Spacelines aircraft to Ellington AFB.

NASA Negotiating Contract For Use Of Aircraft For Over-Size Cargos

NASA announced last month the selection of Aero Spacelines, Inc., Van Nuys, Calif., for negotiation of a contract to provide air transportation service for large government cargoes.

The sole source contract will provide one year's service estimated at \$1.5 million. The contract will provide three one-year renewal options.

Aero Spacelines will operate the only aircraft in existence which can fulfill the size and weight requirement for such out-sized cargoes as the S-IVB stage of the Saturn booster, the Saturn IB and Saturn V instrument units, and the Lunar Excursion Module Adapter. The aircraft is called a "Super Guppy."



FIRE FIGHTING APPAREL—Paul E. Purser (left center), special assistant to the MSC director is shown examining some of the fire fighting apparel in the MSC Fire Station (bldg. 25). Fire Chief A. R. Weldon helps fireman Richard Parker adjust the helmet on the "entry suit" which permits a fireman to go directly into a fire. The suit on the left, worn by fireman Bill Mann, is a "proximity suit," permitting a close approach to fuel type fires. Both suits are equipped with self-contained air supplies. These suits and other equipment will be on display at the MSC Fire Station during Fire Prevention Week, October 3-9.

Fire Station Open House, Posters, Displays To Remind Employees Of 'Prevention Week'

Next week, October 3-9, is Fire Prevention Week and Center employees will be made aware of the need to form good fire prevention habits and possibly save themselves and their families from the tragic consequences of fire.

During the week, employees will be reminded by posters, window displays, a static display in the cafeteria, and a "Facts About Fire" publication that is to be distributed to all employees. This material will be coordinated by the Manned Spacecraft Center's Safety Office.

An open house will be held all next week in the MSC Fire Station (Bldg. 25) on Second Street near the Central Heating and Cooling Plant. All MSC and on-site contractor people are invited to come by to inspect the fire fighting equipment at the station.

The major pieces of fire fighting equipment on display by the fire department will include two pumper units, and a utility vehicle with rescue equipment, portable generator and flood-

light. The department now has on order another pumper unit, a special hazards vehicle and a 100-foot ladder truck.

Observance of Fire Prevention Week is governed by the week that contains October 9, which was the date of the Great Chicago Fire of 1871.

Through the fire prevention efforts of employees and the fire department, no fire losses have been sustained to date in the two years the Center has been in operation, according to Kenneth E. Gentry, head of the fire department's prevention section.

One of the major sources of fires attributed to carelessness here at the Center, Gentry said, is from dumping ashtrays with burning material in them, into trash cans with combustible material. So far all these small fires have been extinguished readily enough to prevent any loss of property.

Gentry also stated that an unusual amount of flammable type liquids are used in many areas of the Center and using caution in handling these materials cannot

be overemphasized.

Three types of fire extinguishers are located in strategic areas throughout the various Center buildings it was pointed out by MSC fire officials. They are: pressurized water, CO₂, and dry chemical. All operate the same way and employees are urged to become familiar with the types of extinguishers in their working area. Fire officials urged all to exercise caution in using a fire extinguisher—never use water on an electrical fire, use CO₂. The dry chemical is best for flammable liquids.

Fire prevention lectures and fire extinguishers demonstrations are available to all on-site organizations upon request. Arrangements may be made through the Safety Office, Ext. 7711, or by calling Ext. 4658 at the Fire Station.

When fire prevention fails, the fastest way to notify the fire department is to activate one of the fire alarm pull boxes located in most buildings on the site—next best is to call Ext. 3211 and give the location. It is always a good idea to make a follow up call if the fire alarm box is used. Fire Chief A. R. Weldon said, so as to give more detail as to where in the building the fire is located. All fire fighting equipment is radio equipped and the information can be relayed to the already dispatched unit.

MSC management and fire safety officials urge employees to take all precautions both at home and at work to eliminate fire hazards and preclude the possibility of allowing a fire to occur.

This year's Fire Prevention Week slogan is "Don't Give Fire A Place To Start."

